

BOTANICAL GAZETTE

APRIL, 1902

UNDESCRIBED PLANTS FROM GUATEMALA AND
OTHER CENTRAL AMERICAN REPUBLICS. XXIII.¹

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(WITH PLATES X AND XI)

Ouratea Tuerckheimii Donn. Sm. (§ OOCARPAE Engl.)—
Folia perelongate oblanceolato-oblonga in quarta parte superiore
acutissime acuminata ad basin angustam obtusa praeter quartam
partem inferiorem dense argutissimeque mucronato-serrata, venis
transversis nervos conjungentibus subtus manifestis. Racemi
paniculati folia fere aequantes, pedicellis 1-4-nis alabastra
oblongo ovoidea plus minus superantibus. Sepala rigida lineari-
oblonga petalis spatulato-obovatis paulo breviora. Gynopho-
rum ovario vix longius, fructiferum obovoideum drupa globosa
paulo minus.

Arbuscula omnino glabrata, ramis et paniculae axibus angulatis. Folia
ad apicem versus ramorum 3-4-subverticillata coriacea generis adhuc ex
longissimis 36-45^{cm} longa supra medium 8-11^{cm} basi 5-10^{mm} lata, nervis
lateralibus crebris arcuatim ascendentibus marginem attingentibus, petiolis
crassis canaliculatis 6-12^{mm} longis. Paniculae pyramidalis rami ascendentes,
bracteis scariosis attenuato-lanceolatis 5-7^{mm} longis, pedicellis 10-13^{mm}
longis, alabastris 8^{mm} longis, floribus 22^{cm} diametralibus (e schedula Tuerck-
heimiana Convallariae majalis odorem diffundentibus). Sepala persistentia
medio crassiuscula et purpurascencia marginibus scariosa 10^{mm} longa, 3^{mm}
lata obtusa, Petala 11-12^{mm} longa 6^{mm} lata. Antherae sessiles 9^{mm} longae.
Gynophorum in anthesi 1^{mm} longum pentagonum. Drupa 9^{mm}-diametralis.—
Ad *O. gigantophyllum* Engl. foliorum forma magnitudine venis, ad *O. podog-
ynam* Donn. Sm. inflorescentia floribusque accedit.

¹Continued from BOT. GAZ. 31: 125. 1901.

In sylvis ad Cubilquitz, Depart. Alta Verapaz, Guatemala, alt. 350^m, Maj. et Sept. 1901, *H. von Tuerckheim*, n. 7829 Pl. Guat. &c., quas edidit Donnell Smith.

EXPLANATION OF PLATE X.—FIG. 1, flowering branch.—FIG. 2, vertical section of flower.—FIG. 3, sepal.—FIG. 4, petal.—FIG. 5, anterior and lateral views of stamen.—FIG. 6, pistil.—FIG. 7, cross section of ovary.—FIG. 8, fruiting branch.—FIG. 9, vertical section of drupe.—FIG. 10, under surface of part of leaf.

Guarea Tuerckheimi C. DC.—Foliis modice petiolatis 5–8-jugis, foliolis oppositis petiolulatis lanceolato-oblongis basi aequilatera acutis apice longiuscule acuminatis acumine obtusiusculo supra glabris subtus ad nervos parce et adpresse pilosulis, paniculis fere e basi 2-partitis ramis inferne breviter ramulosis superne racemiformibus adpresse pilosulis, floribus modice pedicellatis, calyce obtuse 4-dentato petalisque 4 oblongis et apice acutis extus parce et adpresse pilosulis, tubo cylindrico glabro margine leviter crenulato, ovario styloque glabris.

Ramuli juniores adpresse pilosuli dein glabri et pallide fusciscentibus lenticellis concoloribus. Folia usque ad 20^{cm} longa. Folia in sicco firmo-membranacea usque ad 15^{cm} longa et ad 5^{cm} lata pellucido-lineolata, nervis secundariis utrinque 8–10 subarcuato subadscendentibus. Rhachis subteres, junior adpresse puberula. Petioluli fere 5^{mm}, petioli 4^{cm}, pedicelli fere 2^{mm} longi. Paniculae florentes fere 16^{cm} longae. Petala in sicco rubescentia 6^{mm} longa 1.5^{mm} lata. Antherae 8 tubi denticulis oppositae infra ½ longitudinis affixae oblongae glabrae vix 1^{mm} longae. Ovarium conoideum gynophorum superans 4-loculare loculis 1-ovulatis. Stigma orbiculare.—Species *G. purpureae* C. DC. in DC. Monogr. Phan. 1: 564 (ubi adde: Peruvia, Pav. in herb. Boiss.) affinis.

✓Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Aug. 1901, *von Tuerckheim*, n. 7835 Pl. Guat. &c., qu. ed. Donn. Sm.

Matayba clavelligera Radlk.—Arbor ramis teretiusculis, pilis minutis flavidis pulverulento-tomentellis, lenticellosis; folia abrupte pinnata; foliola 4–6, alternantia vel subopposita, superiora majora obovata, reliqua lanceolato-elliptica, omnia integerrima, petiolulata, membranaceo-chartacea, sicca supra sordide viridia, subtus subfusca, pilis minutissimis obverse clavelliformibus aliisque setulosis plus minus dibrachiatis sparsis glandulisque microscopicis praesertim subtus obsita, ceterum glabra, sparsim

pellucide punctata, hypodermate instructa; paniculae in apice ramorum axillares, elongatae, pulverulento-tomentellae; petala sepalis majora, bisquamata; discus puberulus; fructus turbinatus, 3-lobatus, lobo uno alterove abortu minore, styli reliquiis in stigma breviter divaricato-3-lobum terminatis apiculatus, in stipitem mediocrem loculis brevioribus contractus, praeter basin pilis minutis adpressis laxe adpersam glabratus, endocarpio circa seminis insertionem tantum pilosa; semen arillo fere usque ad apicem obtectum.

Arbor ligno duro. Rami paniculas gerentes 4^{mm} crassi, cortice pallide subfusco lenticelloso. Folia circa 25^{cm} longa; foliola superiora 16-20^{cm} longa, 7^{cm} lata, inferiora fere dimidio minora. Paniculae 20-25^{cm} longae (ramis apice interdum fasciatis); bractee bracteolaeque minimae; cymulae sessiles, subglomeruliformes; pedicelli vix 2^{mm} longi, infra medium articulati, fructiferi 5^{mm} longi. Calycis profunde partiti lobi 1.5^{mm} longi, acuti, extus tomentelli. Petala oblonga, fere 2^{mm} longa, breviter unguiculata squamaeque spatulato-oblongae basi interdum connatae petala ipsa paullulum superantes villosiuscula. Stamina 3^{mm} longa, filiformia, inferne villosa, antherae subglabrae. Fructus vix semimaturus stipite 3^{mm} incluso 1^{cm} longus et latus. — Maxime affinis est *M. floribundae* Radlk. (in Sitzungsber. K. Bayer. Acad. 9: 626. 1879) foliolis hypodermate instructis et pilis minutissimis obverse clavelliformibus aliisque setulosis plus minus dibrachiatis praesertim subtus obsitis, sed differt foliolis majoribus obovato-vel lanceolato-ellipticis (nec exactius oblongis) et cymulis sessilibus (nec conspicue stipitatis).

✓Mazatenango, Guat., Jul. 1867, *Bernouilli et Cairo*, n. 3344. — Cubilquitz, Depart. Alta Verapaz, Guat., Dec. 1900, *von Tuerckheim*, n. 7979 Pl. Guat. &c., qu. ed. Donn. Sm.

SWARTZIA MYRTIFOLIA Sm., var. **Guatemalensis** Donn. Sm. — Folia et superiora et inferiora plerumque simplicia, rarius 3-foliolata, sicut foliolum terminale usque ad 19^{cm} longa 6.5^{cm} lata, petiolo communi late (5^{mm}) alato. Stamina majora 8. Ovarium 6-8-ovulatum.

✓Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Maj. 1901, *von Tuerckheim*, n. 7839 Pl. Guat. &c., qu. ed. Donn. Sm.

Gurania megistantha Donn. Sm. (§ F. II. 2. Cogn. in DC. Monogr. Phan. 3: 680.) — Caulis crassissimus cum pedunculis cirrhisque glaber. Flores masculini maximi racemosi, pedicellis gracilibus glabris. Calycis tubus e basi dilatata longissime cylin-

dricus segmentis attenuato-linearibus 4-plo vel ultra longior. Petala lineari-triangularia subulato-apiculata segmentis calycinis altero tanto fere longiora. Antherae anguste lineares tubi duas partes vel ultra aequantes, appendice lineari-triangulari antherae dimidium subaequante.

Caulis ligneus suberosus digitum crassus e nodis radices aërias fibrillosas longissimas emittens. Cirrhi striati 3-4^{dm} longi. Pedunculi singuli vel bini 7-13^{cm} longi, racemis 2.5-4^{cm} longis, pedicellis 1.4-5^{cm} longis. Calyx miniatus omnino glaberrimus, tubo 3.5^{cm} longo basi 6^{mm}, supra basin 4^{mm} lato, segmentis 8^{mm} longis 1.5^{mm} latis enerviis. Petala utrinque papillosa 15^{mm} longa 3^{mm} lata enervia. Antherae breviter replicatae tubi basin attingentes 20^{mm} longae, connectivo angusto cum loculis glabro, appendice utrinque papillosa. Florum nondum evolorum tubus 2.5^{cm} longus, segmenta atque conniventia petala 8^{mm} longa, antherae 18^{mm} longae, appendix 8^{mm} longa. Folia, flores feminini, fructus deficiunt.—Haec species, quamvis quot poteram adipisci exempla foliis careant, tamen optime distincta, descriptionem merere videtur.

✓ In silvis Suerrensibus, Llanuras de S. Clara, Cost., alt. 300^m, Apr. 1896, *Donn. Sm.*, n. 6649 Pl. Guat. &c., qu. ed. *Donn. Sm.*—Eandem plantam foliis delapsis legit *Tonduz* in collibus prope Sikúrbete, Talamanca, Cost., Febr. 1895, n. 9385 herb. nat. Cost.

Gonzalea bracteosa *Donn. Sm.*—Undique plus minus pilosa. Folia oblanceolato-vel obovato-oblonga arcuatim acuminata in basin acutam sensim angustata, stipulis lineari-triangularibus in vaginam petiolo longiorem connatis. Thyrsorum et axillarum et terminalium folia vix aequantium cymae dissitae sessiles brevissimae et cymulae bracteis bracteolisque pluribus foliaceis longissimis involucretae, floribus sessilibus 5-meris. Ovarium biloculare. Bacca globosa calycem aequans.

Frutex 3^m altus, caulibus thyrsisque dense appresseque pilosis, novellis et foliis nascentibus canescentibus. Folia supra praeter nervos mox glabrescentia subtus sparsim pilosa et pallidiora 15-21^{cm} longa 4-7^{cm} lata, nervis lateralibus utrinque 7-8, petiolis 5-9^{mm} longis, stipulis persistentibus 1.5-2^{cm} longis, vagina 7-10^{mm} longa. Thyrsi virgati pedunculo 3-7^{cm} longo addito 8-18^{cm} longi, bracteis bracteolisque lineari-lanceolatis vel linearibus 5-12^{mm} longis dense longeque pilosis, cymulis subsessilibus, floribus ternis nondum satis evolutis circa 4^{mm} longis. Calyx sericeus semiglobosus, dentibus triangularibus intus glabris. Corolla infundibularis praeter setulas erectas glabra, lobis intus et faucibus villosis. Ovarium disco superatum, ovulis paucis.

Bacca sucosa nigra 4^{mm} diametralis, pyrenis in utroque loculo 1-3 (omnibus in speciminibus suppetentibus abortu vacuis).

In silvis profundis udisque ad Suerre, Llanuras de S. Clara, Cost., alt. 300^m, Apr. 1896, *Donn. Sm.*, n. 6583 Pl. Guat. &c., qu. ed. Donn. Sm.

Psychotria polyphlebia Donn. Sm. (Sect. EUPSYCHOTRIA, § BRACTEOSAE Muell. Arg. in Mart. Fl. Bras. VI. V. 313).—Suffrutex humilis simplex ferrugineo-pilosus. Folia oblongo-obovata superne rotundata minutissime cuspidata in petiolum longum attenuata supra glabra et lineolis punctulata subtus pilosa, nervis lateralibus creberrimis supra prominentibus subtus immersis, venis obsolete. Pedunculi axillares, capitulis obscure rameis multifloris, bracteis exterioribus ad basin ramorum sitis herbaceis oblongo-ovatis, interioribus subaequilongis oblongis. Calyx ovario stipitato superatus. Corollae tubus lobis 5-plo longior. Drupae cocci orbiculares valde compressi.

Caulis e basi radicante ascendens 12-24^{cm} altus superne pilosus, internodiis brevibus. Folia 11-16^{cm}, longa 5-7.5^{cm} lata, nervis lateralibus utrinsecus 25-34 circa 3-5^{mm} inter se distantibus patulis subrectis parallelis sub margine conjungentibus, petiolis dense pilosis 2-6^{cm} longis, stipulis parvis subulato-bifidis deciduis. Pedunculi pilosi 2-3^{cm} longi. Capitula subhemisphaerica 7-12^{mm} alta basi 15-25^{mm} lata, bracteis haud coloratis discretis bracteolisque lineolatis sparsim piliferis, floribus 5-meris bracteolas involucentes subaequantibus. Calyx denticulatus. Corolla alba extus sparsim pilifera, tubo tenuiter cylindrico in fauces nudas ampliato. Antherae lineariblongae exsertae. Drupae circa 10-aggregatae globosae carnosae coccineae, coccis osseis 7-9^{mm} diametralibus dorso leviter convexo sulcatis facie ventrali subconcava laevibus.

In silvis uliginosis Suerrensibus, Llanuras de S. Clara, Cost., alt. 300^m, Apr. 1896, *Donn. Sm.*, n. 6854 Pl. Guat. &c., qu. ed. Donn. Sm.—In declivibus silvestribus montis *Tsaki*, Talamanca, Cost., alt. 500^m, Apr. 1895, *Tonduz*, n. 9577 herb. nat. Cost.

Cestrum Poasanum Donn. Sm. (Sect. EUCESTRUM, § I. Dun. in DC. Prodr.).—Glabrum. Folia longiuscule petiolata e basi optime rotunda sensim acutissimeque lanceolata subtus pallida, nervis subtus prominulis fuscentibus, lateralibus arcuatim longeque ascendentibus, areolis subtus conspicuis majusculis. Flores paniculati pauci-aggregati, pedicellis vix ullis bracteolatis. Calyx badius, denticulis subulato-apiculatis. Corollae violaceae tubus

subcylindricus et calyce et lobis propriis 5-plo longior. Filamenta breviter adnata ibidem et loco egressus minutissime appendiculato pubescentia.

Frutex 3-4^m altus articulatione foliorum nodosus, ramulis subflexuosis. Folia subcoriacea subtus granuloso-punctulata 8-12^{cm} longa 2.5-4^{cm} lata, nervis lateralibus fortioribus utrinsecus 6-8, petiolis 12-15^{mm} longis. Paniculae axillares et terminales folia vix aequantes, floribus ad apicem versus axium secundariorum 3-4-fasciculatis, bracteolis brevissime filiformibus. Calyx tubuloso-campanulatus 4^{mm} altus 2^{mm} latus, dentibus triangularibus. Corollae succulentae tubus tenuis nervosus e basi sursum paulatim ampliatus super ovarium haud constrictus 21^{mm} longus ad fauces 3.5^{mm} latus, lobi patentes utrinque violacei ovati acuti 4^{mm} longi. Genitalia tubo aequilonga. Filamenta e tertia parte superiore tubi libera et glabra, appendice oblonga 0.5^{mm} longa. Discus cupuliformis. Stigma concavo-discoideum. Drupa fusca globoso-ovalis 7^{mm} longa, seminibus 2-10, nonnullis saepius abortivis.—*C. nocturno* L. affine.

✓ In fruticetis apertis declivium montis vulcanici *Poás*, Prov. Alajuela, Cost., alt. 2500^m, Mart. 1896, *Donn. Sm.*, n. 6674 Pl. Guat. &c., qu. ed. *Donn. Sm.*—Eadem planta sub n. 109 Endres in herb. Kew. exstat.

Columnea calcarata *Donn. Sm.* (§ *ORTHOLOMA* Benth.).—Glabra. Folia carnosae nitidae parum disparia obovata apice ipsa acuminata in petiolum attenuata. Pedunculi solitarii flore 3-4-plo breviores. Calycis obliqui segmenta inaequalia lanceolata dorso valde carinato in pedunculum decurrentia. Corollae declinatae tubus calyce 5-plo longior in calcar productus supra tertiam partem cylindricam paulatim ampliatus, limbo subobliquo, lobis subaequalibus.

Frutex epiphyticus repens ramosus. Cujusque paris folium alterum 4-6^{cm} longum, 2-2.5^{cm} latum, alterum triente minus, nervis lateralibus utrinque 4-5 et venarum reticulis obscuris. Pedunculi 5-carinati 9-12^{mm} longi. Calyx 6^{mm} altus, segmentis utrinque pubescentibus, majoribus 3^{mm} longis. Corollae coccineae tubus calcare 5^{mm} longo addito 33^{mm} longus vix ventricosus, lobi circa 7^{mm} longi. Stamina ad 1^{cm} supra tubi basin affixa et ibidem pubescentia 18-22^{mm} longa basi in vaginam adnatum connatis, antheris subquadratis 2^{mm} latis, loculis late discretis ovalibus 1.5^{mm} longis. Disci glandula solitaria integra ovalis 2^{mm} longa. Ovarium pubescens oblongo-ovoideum 3^{mm} longum, stylo 27^{mm} longo, stigmatem stomatomorpha. Fructus desideratur.

✓ Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Febr. 1900, *von Tuerckheim*, n. 7645 Pl. Guat. &c., qu. ed. *Donn. Sm.*

Bravaisia grandiflora Donn. Sm.—Praeter inflorescentiam glabrescens. Folia elliptica utrinque acuminata caudato-producta, venis obsolete. Panicula folia aequans, bracteolis orbicularibus mucronatis. Calyx bracteolis 3-plo longior, segmentis oblongis mucronatis. Corolla violacea maxima calyce 5-plo longior ad tertiam partem lobata, tubo cylindrica supra calycem in limbum infundibularem ampliata, lobis oblongo-obovatis extus pilosis. Antherae triangulari-sagittatae. Ovarium 4-ovulatum.

Frutex, ramulis subtetragonis lenticellatis. Folia subcoriacea subtus densissime lineata ad apicem versus ramulorum 11–12^{cm} longa 4–4.5^{cm} lata in caudam 11–16^{mm} longam acuminata in petiolos 9–13^{mm} longos basi connatos decurrentia. Thyrsi in paniculam trichotoman subcorymbosam 14^{cm} altam foliaceo-bracteata dispositi, axibus gracilibus, floribus aggregatis sessilibus, terminali bracteis e basi sessili ovata longissime lineari-productis fulto. Calycis segmenta paene sejuncta 9^{mm} longa obtusa cum bracteolis basi connatis subcoriacea apice carinata enervia flavo-pubescentia ciliata. Corolla 4.5^{cm} longa, tubo 10^{mm} longo, limbo 19^{mm} longo, basi 4^{mm} ore 10^{mm} lato, lobis 13^{mm} latis aestivatione sinistrorsum obtegentibus. Stamina basi barbata et dilatata annulo tenui piloso affixa, antheris 4^{mm} longis, loculis inferne mucronatis. Discus parum conspicuus. Ovarium oblongo-ovoideum. Stylus 27^{mm} longus, stigmatis lobo postico obsolete. Capsula mihi non visa.

In silvis ad Sachichá, Depart. Alta Verapaz, Guat., alt. 1000^m, Apr. 1901, von Tuerckheim, n. 7924 Pl. Guat. &c., qu. ed. Donn. Sm.

Citharexylum pterocladum Donn. Sm.—Glabrum. Rami alato-quadrangulares. Folia membranacea oblongo-elliptica apice acutiuscula mucrunculata in petiolum attenuata laxe reticulata. Racemi ex axibus superioribus orti et in paniculam amplam dispositi, pedicellis calyce dimidio brevioribus bracteola bis terve longioribus. Calyx truncatus costis apiculatus. Corolla lilacina nervosa, tubo calycem bis superante lobis supra basin dilatatis paulo longiore.

Arbor silvestris, ramis fistulosis digitum minimum crassis, angulorum alis circa 2^{mm} latis, ramulis ultimis compressis. Folia opposita subfalcata 10–15^{cm} longa 3.5–6^{cm} lata supra minutissime atro-punctulata basi subobliqua glandulis 2 oblongis subtus foveolata, nervis purpurascens, lateralibus utrinsecus 6–7, petiolis 2–3.5^{cm} longis. Paniculae usque ad 30–40^{cm} altae, racemis erecto-patentibus 8–20^{cm} longis, floribus sparsis, pedicellis 2^{mm} longis, bracteolis subulato-triangularibus. Calyx tubuloso-campanulatus ore pubescens

ceterum glaber. Corollae praeter margines ciliolatos et fauces cano-villosas glabrae tubus 6^{mm} longus, lobi non satis aequales circa 4^{mm} longi basi 2^{mm} superne 3^{mm} lati reticulato-nervosi, 2 exteriores lineis 3 violaceis notati (ex oculatissimi repertoris schedula). Stamina 4 paulo infra fauces inserta subinclusa.—Ab *C. quadrangulari* Jacq. ramorum alis, foliorum retibus, corollae colore atque nervis insigniter differt.

Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Febr. et Mart. 1901, von *Tuerckheim*, n. 7922 Pl. Guat. &c., qu. ed. Donn. Sm.

ARISTOLOCHIA ARBOREA Linden ex Hook. Bot. Mag. t. 5295. (§ GYMNOLOBUS; *Unilabiatae*.)—Fruticosa ramosa, ramis erectis velutino-setosis; petiolis 1^{cm} longis, foliis adultis crassiusculis superne glabrescentibus subtus, praecipue secus nervos, molliter setosis, 34^{cm} longis 10^{cm} latis oblique oblongo-lanceolatis longe acuminatis basi rotundatis 1-nerviis, nervis secundariis remotiusculis arcuatis; foliis junioribus subtus dense ferrugineo-tomentosis; pedunculis aggregatis e trunco suberoso supra terram emergentibus singulis 3–4^{cm} longis gracilibus; perianthio 8–9^{cm} longo basi tubulato, tubo superne oblique dilatato in limbum latum cordatum acuminatum venoso-bullatum expanso; fauce aperta processu marculiformi crassiusculo stipitato capitato, capite carnuloso, praedita; columna oblonga, antheris linearibus.—*A. maximam* Jacq. quoad habitum refert, foliis, perianthioque valde differt; processu capitato carnuloso e limbo emergente valde insignis.

De hac specie ita in litt. scribit oculatissimus repertor: "Kleiner Waldbaum; Blumen stets am Grunde des Stammes vordrechend, braun, an der unteren Spitze weiss."

Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Jul. 1901, von *Tuerckheim*, n. 7936 Pl. Guat. &c., qu. ed. Donn. Sm.

ARISTOLOCHIA PILOSA H. B. et K., var. *ligulifera* Mast.—A typo, ex confesso, valde variabili differt haecce varietas limbo perianthii ligulis nigrescentibus carnosulis superne dense vestito.

Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, Mart. 1901, von *Tuerckheim*, n. 7768 Pl. Guat. &c., qu. ed. Donn. Sm.

Haecce varietati forsitan attribuenda: n. 2668 Bernouilli et Cario, Guatemala; n. 203 Endres, Costa Rica; n. 1271 Kalbreyer, Ocaña; n. 178 Wagner, Panamá, in herb. Monac.

Aristolochia securidata Mast. (§ GYMNOLOBUS: *Unilabiatae*.)

—Setulosa demum glabrescens, petiolis 3–4^{cm} longis, foliis subcoriaceis glabris 12^{cm} longis 7^{cm} latis cordato-oblongis abrupte acuminatis basi bilobis, lobis rotundatis sinu lato separatis, palmatim 5-nerviis, nervo medio crassiore, nervis lateralibus convergentibus arcuatis; perianthio 4^{cm} longo, tubo basi erecto ventricosio 1^{cm} longo, medio infundibuliformi aequilongo in limbum 3–4^{cm} longum hastato-triangulari nervosum producto; columna oblonga, antheris linearibus; stylis 6 oblongis ad margines recurvatis.—Forma perianthii omnino distincta.

✓Rosario, Llanuras de Santa Clara, Cost., alt. 300^m, Jul. 1899, *H. Pittier*, n. 7604 Pl. Guat. &c., qu. ed. Donn. Sm.

Piper calophyllum C. DC.—Foliis modice petiolatis ample ovatis basi aequilatera cordatis apice acuminatis supra ad nervos et subtus ubique hirsutis, nervo centrali paulo ultra $\frac{1}{2}$ longitudinis suae nervos arcuatim adscendentes utrinque 9 mittente quorum infimi utrinque 3 magis approximati, petiolo usque ad limbum vaginante pedunculoque quam petiolus brevior hirsutis, spica florente cylindrica crassa apice mucronata quam folii limbus pluries brevior, bractee vertice triangulari-truncato glabro, pedicello lato subcucullato utrinque villosa.

Ramuli hirsuti, amentiferi 11^{mm} crassi nodis hand tumidis, collenchymate haud vel parce et sparsius libriformi in fasciculos discretos disposito, fasciculis intramedullaribus permultis 1-seriatis. Limbi in sicco subcoriacei opaci et pellucido-punctulati circiter 29^{cm} longi et 19^{cm} lati. Petioli fere 4.5^{cm}, pedunculi 1^{cm} longi. Spica florens 6.5^{cm} longa et 6^{mm} crassa, mucrone fere 3^{mm} longo. Stamina 4 ovarii basi ima adnata, antheris reniformibus quam filamento multo brevioribus. Ovarium glabrum apice subattenuatum. Stigmata 3 sessilia linearia brevia et recurva. Bacca verisimiliter subtetragona.

—Species sectionis *Steffensia* C. DC.

✓Cubilquitz, Depart. Alta Verapaz, Guat., alt. 350^m, 1901, *von Tuerckheim*, n. 7959 Pl. Guat. &c., qu. ed. Donn. Sm.

Mollinedia Costaricensis Donn. Sm. (§ APPENDICULATAE Perk.).

—Folia utrinque sparsim appresse pilosa rotundo-obovata aut late ovalia abrupte brevissimeque acuminata basi actua supra medium remote minuteque denticulata. Cymae ad apicem versus pedunculi brevis fasciculatae simplices aut rarius breviter thyrsoidae cum perianthiis luteis pilosae. Perianthii ♂ lobi

ovati obtusi, interiores receptaculum vix superantes exterioribus paulo breviores appendice subquadrata dentata instructi, staminibus circa 22–28. Perianthium ♀ ovoideum, lobis triangularibus aequalibus, carpellis numerosissimis hemisphaericis. Drupae globoso-ovales.

Frutex 10–12^m (e schedula Pitterian arbuscula, corona depressa), ramulis novellis pilosis. Folia juniora pellucido-punctulata 6.5–10^{cm} longa 5.5–8^{cm} lata, aetate proveciore coriacea praeter nervos glabrescentia usque ad 16^{cm} longa et 10^{cm} lata, nervis fortioribus lateralibus utrinque 5–6, petiolis pilosis 1–1.5^{cm} longis. Cymae axillares et terminales petiolis paulo vel bis longiores bracteolatae, pedunculo 2–8^{mm} longo, axe primario nonnunquam evoluto, axibus secundariis 5–10^{mm} longis, tertiariis trinis quam flores brevioribus. Perianthium ♂ obpyramidale 6^{mm} altum, lobis erecto-patentibus 3–3.5^{mm} longis, receptaculo intus glabro, antheris ovoideis breviter stipitatis, loculis confluentibus. Perianthium ♀ 9^{mm} altum, lobis 1.5^{mm} longis, receptaculo breviter cupuliformi 7^{mm}-diametrali sericeo alveolato, carpellis sericeis circa 48–54, stylo brevi. Drupae subessiles in specimenibus suppetentibus abortione solitariae 1^{cm} longae deraso indumento glabrescentes.—Juxta methodum in Monographia clari Perkins expositam prope *M. Boliviensem* A. DC. collocari debet.

La Emilia, Llanuras de Santa Clara, Cost., alt. 250^m, Apr. 1896, *Donn. Sm.*, n. 6760 Pl. Guat. &c., qu. ed. *Donn. Sm.*—Tuis probe Turrialba, Prov. Cartago, C. R., alt. 620^m, Maj. 1897, *Pittier*, n. 11.250 herb. nat. Cost.—In pascuis ad Aragon, Prov. Cartago, C. R., alt. 630^m, Jan. 1899, *Pittier*, n. 13.226 herb. nat. Cost.—In silvis ad Las Vueltas, Tucurrique, C. R., alt. 650^m, Maj. 1899, *Tonduz*, n. 13.365 herb. nat. Cost.

Ocotea Palmana Mez et *Donn. Sm.*—Foliis rigidiuscule coriaceis, adultis supra praeter nervos primarios plus minus tomentellos glabratis, subtus adpresse tenuiterque tomentellis, latissime obovato-ellipticis, basi late acutis, apice acumine parvo latoque imposito rotundatis, penninerviis, subtus valde prominuloretatis; inflorescentia dense ferrugineo-tomentosa foliis multo brevior; floribus hermaphroditis, dense tomentellis, perianthii tubo 0; filamentis subnullis; staminodiis deficientibus; ovario glabro stylum papillosum crassum subaequante.

Ramuli dense adpresse ferrugineo-tomentelli. *Folia* petiolis plus minus 20^{mm} longis stipitata, plus minus 190^{mm} longa, 110^{mm} lata, supra costis venisque nonnullis immersis laevia, margine plana. *Inflorescentia* subpauciflora, squarrose breviter panniculata; pedicellis plus minus 3^{mm} longis, bracteolis

partim diu persistentibus lingulato-lanceolatis pedicellos superantibus. *Flores* hermaphroditi, 5–6^{mm} longi; limbi segmentis ovato-ellipticis, subacutis. *Filamenta* ser. I, II omnia subnulla, ser. III antheris bene breviora tomentosa glandulis binis magnis pallidis inter stamina ser. exteriorum collocatis praedita. *Antherae* suborbiculares, apice rotundatae, loculis 2 introsim 2 valde lateraliter fere extrorsim dehiscentibus. *Fructus* ignotus.

In sylvis prope La Palma, Cost., alt. 1500^m, Nov. 1898, *Tonduz*, n. 7374 Pl. Guat. &c., qu. ed. Donn. Sm. (n. 12652 herb. nat. Cost.).

Obs. Absque dubio *Ocoteae* Salvini Mez Guatemalensi peraffinis.

Ocotea Quisara Mez et Donn. Sm.—Ramulis apicem versus bene angulatis; foliis chartaceis, glaberrimis, optime ellipticis, basi breviter nunc brevissime acutis apice eleganter acuminatis, penninerviibus, subtus tenuiter denseque prominulo-reticulatis; inflorescentia submultiflora, pyramidatim paniculata, minute cinereo-tomentella, foliis multo breviora; floribus hermaphroditis, adpresse tomentellis; perianthii tubo 0; antheris sessilibus, anguste ellipticis, apice rotundatis, papillosis; staminodiis bene evolutis stipiti-formibus; ovario glabro, ellipsoideo.

Ramuli apicem versus minute peradpresseque cano-tomentelli. *Folia* petiolis plus minus 20^{mm} longis, fere usque ad apicem in statu sicco insigniter nigricantibus stipitata, membranaceo-chartacea, paullo nitidula, plus minus 300^{mm} longa, 115^{mm} lata, margine fere plana. *Inflorescentiae* in ramulorum apice e squamarum deciduarum axillis provenientes; pedicellis vix ultra 4^{mm} longis bracteolis deciduis. *Flores* 4^{mm} longi; limbi segmentis ellipticis, rotundatis; antheris connectivo ultra locellos optime per paria superpositos producto apice rotundatis, ser. exteriorum absque dubio introrsis, ser. III basi glandulis binis globosis manifestis praeditis. *Ovarium* stylo crassiuscule cylindrico subaequilongo, stigmatate capitulato. *Fructus* ignotus.

La Concepcion, Llanuras de Santa Clara, Cost., alt. 250^m, Febr. 1896, *Donn. Sm.*, n. 6756 Pl. Guat. &c., qu. ed. Donn. Sm.—La Emilia, Llanuras de S. Clara, alt. 1250^m, Apr. 1896, *Donn. Sm.*, n. 6751 Pl. cit.—Atirro, Prov. Cartago, C. R., alt. 600^m, Apr. 1896, *Donn. Sm.*, n. 6753 Pl. cit.—Sub Sassafrideo (*Ocotea*) Veraguensi Meissn. distributa.—Incolis *Quisará*.

Obs. Species e pulcherrimis inter *O. Veraguensem* et *O. dendrodaphnem* intermedia huic propius accedens. Sed folia et textura et magnitudine nec non inflorescentia pluriflora optime paniculata, &c., plane differt.

Trema enantiophylla Donn. Sm.—Folia opposita oblongo-ovata basi rotundata interdum retusa, in ramis floriferis ovato-elliptica acute elongata basi acutiuscula, stipulis in unam intra-

petiolarem connatis, petiolis linea interpetiolari conjunctis. Cymulae in utraque axilla geminae, floribus dioicis. Perianthii segmenta imbricata. Floris masculini ovarium rudimentarium evolutum.

Frutex 4-6^m altus, ramis cavis medullosis glabrescentibus rubiginosis verrucosis, novellis pubescentibus. Folia majora 14-16^{cm} longa 8-10^{cm} lata, folia cymulas fulcientia 9-12^{cm} longa 3.5-5^{cm} lata, supra pilis bulbosis scabra subtus glabrescentia tri- vel tripli-nervia, nervis lateralibus utrinque 3-5 et basilaribus angulo acuto alte ascendentibus, petiolis pubescentibus 1.5-5^{cm} longis, stipulis lineari-triangularibus 3-6^{mm} longis. Cymulae pubescentes multiflorae, masculinae 20-25^{mm} longae, femininae 15-18^{mm} longae, pedicellis quam flores brevioribus basi bracteatis, floribus 5-meris. Floris ♂ perianthium 2.5^{mm} altum usque ad basin paene partitum, segmentis erecto-patentibus oblongo-ellipticis obtusis intus glabris, filamentis glabris perianthio paulo brevioribus jam in alabastro erectis, antheris subversatilibus, disco piloso, ovarii rudimento 1^{mm} longo stylo bifido rubescente apiculato. Floris ♀ perianthium minutum campanulare, lobis brevibus ovalibus, staminodiis 0, ovario semi-incluso subobovato 2^{mm} alto leviter compresso, stylo usque ad basin in ramos 2 ovario longiores totos stigmatosos diviso, ovulo pendulo. Fructus mihi non visus.—Species phyllotaxi et stipulis in Tribu *Celtidiae* abnormis Pileam mentitur. Num sit genus novum?

✓Secus flumen prope Estrella, Prov. Cartago, Cost., alt. 1800^m, Mart. 1888. *Juan J. Cooper*, n. 5949 Pl. Guat. &c., qu. ed. Donn. Sm.—Ad ripas Río Pedregoso, El Copey, Cost., alt. 1800^m, Febr. 1898, *Ad. Tonduz*, n. 7517^b Pl. Guat. &c., qu. ed. Donn. Sm. (n. 11734 herb. nat. Cost.).

Costus splendens Donn. Sm. et Tuerckheim.—Folia glabra petiolata maxima lanceolata e medio utrinque angustata, infima obovato-elliptica. Bracteae inferiores foliaceo-appendiculatae, florales optime ovaes floribus maximis bis superatae. Calyx campanulatus quarta parte triangulari-dentatus. Corolla aurea, lobis obtusis. Labellum elongato-obovatum corollam triente superans 3-lobatum, lobis lateralibus sub-quadratis violaceo-purpureo-fasciatis, intermedio in lacinias 3 plus minus angustas recurvas aureas usque ad basin fere partito. Stamen oblongo-ellipticum, apice longe acuteque dentata inflexa.

Caulis biorgyalis et ultra circa 4^{cm} crassus, internodiis plerumque 4-6^{cm} longis, vaginis fere glabris, ocreis pilosis subtruncatis 1^{cm} altis. Folia usque ad 4-5^{dm} longa 12-13^{cm} lata sursum acute attenuata basi petiolo vix latiora, infima 32^{cm} longa 15^{cm} lata, subtus purpurascencia vel denique laete vire-

scientia, petiolis 14^{mm} longis basi dilatata 12^{mm} latis. Spica strobiliformis virescens bracteis 3-4 foliaceis 13-25^{cm} longis fulta, bracteis floralibus extus pubescentibus intus viosis 5^{cm} longis 2.5^{cm} latis apice rotundatis, bracteola lineari 28^{mm} longa pubescente, floribus generis adhuc maximis circa 1^{dm} longis. Calyx pubescens 10-12^{mm} altus. Corolla glabra 6.5^{cm} longa, tubo 2.5^{cm} longo, segmentis obovato-ellipticis. Labelli lobi circa 20-25^{mm} longi, postici inaequales 22-25^{mm} lati margine erosi, laciniae anticae lineares vel oblanceolate 2-5^{mm} latae. Stamen 3^{cm} longum 13^{mm} latum ultra loculos 12^{mm} longos 17^{mm} productum. Stigma cano-pubescentis semiorbiculare 4^{mm} latum, appendice vix brevior ovali bifido. Ovarium dense pilosum late cylindricum 11^{mm} longum.—Foliorum florumque magnitudine, et horum fabrica insignis.

Guatemala, alt. 350^m, Jul. 1901, von Tuerckheim, n. 8015 Pl. Guat. &c., qu. ed. Donn. Sm.

DONNELIA C. B. Clarke, nov. gen. *Commelinacearum*.—Capsula trivalvis, loculis monospermis; caetera *Tradescantiae*.

Donnellia grandiflora C. B. Clarke (sp. unica).—*Callisia grandiflora* Donn. Sm. in BOT. GAZ. 31: 125. 1901.

This species cannot remain in *Callisia*, to which genus Donnell Smith has from the capsule referred it; as he observes, the stamens and the habit are those of *Tradescantia* Sect. *Descantaria*. We may either arrange the plant as a new subgenus *Donnellia* of *Tradescantia*, or call it **DONNELIA** nov. gen., as here proposed. On the suggestion of Captain Donnell Smith, I may here give reasons for this course.

In my monograph of the *Commelinaceae* (DC. Monogr., Phan. III) no attempt is made to deal with the genera "logically;" the same characters, which in the American genera (*Tradescantia* and its allies) constitute genera, only constitute subgenera in *Commelina* and *Aneilema*. The main reason for this course (*i. e.*, following my predecessors), was to avoid the introduction of new names, and in particular of a disputed synonymy; and Bentham has here followed me; convenience has been preferred to any logical system.

A concrete instance may make this more quickly clear. The two subgenera of *Commelina* are absolutely distinguished (as *cf.* Bentham), and I might have taken up *Monoon* and *Didymoon* as genera (in order to make the arrangement consistent with that of the American group); in this case *Commelina nudiflora* L. would have become *Didymoon nudiflorum* C. B. Clarke, and *Commelina Virginica* L. would have become *Monoon Virginicum* C. B. Clarke. We should then have had two names current for each species; for many botanists would prefer to keep only one genus. But this would have been only a trifling inconvenience. A school of modern botanists, who believe in "laws," hold that the Linnean name *Commelina* must be retained for something, must not be sunk altogether. Then would arise the insoluble

problem whether the "type" of the Linnean genus *Commelina* was some species of *Didymoon* or some species of *Monoon*. Then there would be a question whether he had a type; or, if not, which was the first species he regarded as a *Commelina*. We should thus have had one set of botanists adopting the two genera *Commelina* and *Monoon*, another set those of *Didymoon* and *Commelina*, with two new names for each of the ninety species of *Commelina*. The case of *DONNELIA* differs; treating it as a genus alters the name of no other existing species.

EXPLANATION OF PLATE XI.—FIG. 1, habit.—FIG. 2, cyme in fruit.—FIG. 3, flower.—FIG. 4, sepal.—FIG. 5, petal.—FIG. 6, perfect stamen.—FIG. 7, imperfect stamen.—FIG. 8, pistil.—FIG. 9, capsule.—FIG. 10, cross section of capsule.—FIG. 11, anterior and posterior views of seed.—*Figs. 1 and 2* are natural size; the others are variously enlarged.

Polypodium Alfari Donn. Sm. (§ EUPOLYPODIUM).—Frons parva pendula glabra pinnata linearis deorsum paulatim attenuata, pinnis utrinque 15–35 adnatis contiguis triangularibus vel e basi triangulari linearibus integris margine superiore ad basin dilatato angulo recto patentibus, inferiore decurrentibus, venis simplicibus paucis brevissimis in pinnarum dimidia parte exteriori nullis, soris 1–6 costae approximatis.

Stipites fasciculati filiformes arcuati castanei inferne pilis patentibus vestiti 1.5–2.5^{cm} longi. Frons membranacea 10–20^{cm} longa 1.5–4^{cm} lata, rhachi ebenea. Pinnae distinctae alternae medio 2–3^{mm} latae, inferiores laxiores, infimae ad alas cuneatas reductae, costa ebenea infra apicem evanescente, vena basali superiore ceteris longiore obsolete sorifera, soris majusculis rotundis, extimis ad costam subimpositis, paraphysibus nullis.—*P. capillari* Desv. proximum.—Oculatissimi repertoris in honorem dicavi.

In truncis arborum, Sierra Alta de Navarro, Prov. Cartago, Cost., alt. 2000^m, Maj. 1901, *Anastasio Alfaro*, n. 8063 Pl. Guat. &c., qu. ed. Donn. Sm.

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